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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/620,677 | 07/16/2003 | Michael J. McNitt | McNitt | 9642 |

7590 02/06/2007
Michael J. McNitt
9646 South Promenade Place
Highlands Ranch, CO 80126

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| EXAMINER |
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AKHAVANNIK, HADI

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| ART UNIT | PAPER NUMBER |
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2624

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 02/06/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| | | | |
|------------------------------|-------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/620,677 | Applicant(s) MCNITT, MICHAEL J. | |
| | Examiner Hadi Akhavannik | Art Unit 2624 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6-11 and 14-20 is/are rejected.
- 7) ☒ Claim(s) 4, 5, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>10/9/2003</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-2 and 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbit et al. (5772522, referred to as "Nesbit" herein) in view of Taggett (6254492).

Regarding claim 1, Nesbit teaches (a) one or more video image recording devices (figure 1, item 11 and column 4 lines 59-65 discloses many cameras);

(b) a computer processing environment for processing and storing video image data recorded by said video image recording devices (figure 1 and column 4 line 66 to column 5 line 62 discloses multiple computers used to record and analyze the data);

(c) a light reflective element attached golf putter whereby providing means to detect and measure motion of said golf putter (column 6 lines 1-15 discloses placing markers on the golf club. The examiner notes that a putter is just a specific type of golf club and Nesbit's disclosure reads on putter as well);

(d) means for processing said video image data containing recorded image representations of said light reflective element whereby determining a plurality of motion measurements of said light reflective element, and thereby said golf putter to which said light reflective element is attached (column 6 line 54 to column 10 line 56 discloses various measurement methods);

(e) a display device providing means for presenting said motion measurements (see figure 1, the rejection of part (d) above and column 3 lines 63-65 discloses displaying the data);

Nesbit does not disclose calibrating the measurement error.

Taggett discloses (f) means for calibration such that measurement error caused by distortion or misalignment of said image recording devices is substantially reduced; whereby providing objective physical motion information to aid in instruction and correction of said putting stroke (see column 3 lines 23-27 and column 5 lines 39-50 disclose calibrating and aligning the image recording devices to ensure proper measurements).

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Nesbit a calibration means as taught by Taggett. The reason for the combination is because it makes for a more robust system that ensure the cameras are positioned correctly by using a marker (see motivation by Taggett in column 5 lines 40-45).

Regarding claim 2, Taggett discloses the analysis tool as defined in claim 1 further comprising a means for automatically starting a detection process as part of processing said video image data based on a predetermined amount of change of said video image data contained within a user defined hot-spot region as a function of time (see column 6 lines 30-48 discloses automatically starting the video after conditions are met).

Regarding claims 6-7 the examiner takes official notice that it would have been exceedingly obvious at the time of then invention to one of ordinary skill in the art to have a camera or camcorder with composite video output. The reason for this is because this technology is very well known and extremely common way of outputting video to a display.

Regarding claim 8, the examiner takes official notice that it would have been exceedingly obvious at the time of the invention to one of ordinary skill in the art to have reflective tape that has at least one straight edge. The reason is because it is very common to have reflective tape and for that piece of tape to have a straight edge. Note that Nesbit discloses using reflective markers.

Regarding claim 9, please see the rejection of claim 1 as Nesbit discloses creating a computer model of the golfer. This requires for the processor to detect the positions of the reflective tape.

Regarding claim 10, please see the rejection of claim 1 as it discloses all aspects of claim 1. An analogous argument is made in regards to a sand wedge as was made to a putter.

2. Claims 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbit et al. (5772522, referred to as "Nesbit" herein) in view of Taggett (6254492) in further view of Terry, III et al. (5527041, referred to as "Terry" herein).

Regarding claim 3, Taggett already discloses in column 5 lines 35-50 that a marker is used to calibrate and align the camera.

However, neither Taggett nor Nesbit disclose a calibration fixture.

Terry discloses a calibration fixture containing a guiding feature and visual calibration target aligned to one another to aid in the process of calibrating and aligning said analysis tool (see the abstract and column 3 line 54 to column 4 line 62 as it disclose a light source that helps in aligning.)

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Nesbit and Taggett a guiding and alignment means as taught by Terry. The reason for the combination is because it allows for a system that is able to guide the club head during a stroke to insure an accurate stroke.

3. Claims 11 and 14-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nesbit et al. (5772522, referred to as "Nesbit" herein) in view of Taggett (6254492) in further view of Gobush et al. (20030103684 referred to as "Gobush" herein).

Regarding claim 11, the rejection of claim 1 discloses all aspects of claim 1 except for a calibration fixture and secondary features.

Gobush discloses a calibration feature in paragraphs 48-49 and a secondary features in paragraphs 118.

It would have been obvious at the time of the invention to one of ordinary skill in the art to include in Nesbit and Taggett a calibration and secondary feature means as taught by Gobush. The reason for the combination is because it makes for a more robust system that is able to correct alignment and find addition data about the trajectory of a golf ball.

Regarding claim 14, the rejection of claim 1 discloses all aspects of claim 14 (see Nesbit column 6 line 54 to column 10 line 58).

Regarding claim 15, Nesbit discloses detection process employs digital image processing algorithms to find a center location and edges of the representation of said reflective element in each said frame of video image data, thereby determining position and angle of said golf putter (column 9 lines 4-53 discloses the solid modeling).

Regarding claim 16, Nesbit and Gobush discloses secondary motion data is comprised of stroke tempo, back stroke distance, follow through distance, off-line distance, and variance from ideal path (see Nesbit column 10 line 59 to 12 line 50 discloses secondary motion data and see paragraphs 114-121 of Gobush).

Regarding claims 17 please see the rejection of claim 16 and also see paragraph 121 of Gobush as it discloses saving the data.

Regarding claim 18-20 please see the rejection of claim 16 discloses all aspects of claim 18.

Allowable Subject Matter

Claims 4-5 and 12-13 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Cohen et al. (2003/0195052) discloses a camera calibration unit.

Kiraly (2004/0032970) disclose a camera calibration and measurement parameters calculation unit.

Haas et al. (4137566) discloses a golfer model creation unit.

Blakenship (6227984) discloses a golf swing analysis means.

Mengoli (6514081) discloses a camera calibration unit.

Cameron et al. (2001/0029207) discloses an alignment method.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hadi Akhavannik whose telephone number is 571-272-8622. The examiner can normally be reached on 10:30-7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (571)272-7695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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1/25/07



JOSEPH MANCUSO
SUPERVISORY PATENT EXAMINER